

### **REMARKS/ARGUMENTS**

Claim 22 has been amended to correct inadvertent errors, by adding an omitted phrase and correcting some obvious typographical errors.

Claims 23 and 27 depend directly or indirectly from claim 22 and have thus been amended in accordance with amended claim 22.

New Figure 4 contains no new matter, since is substantially identical to Figure 1, with the addition of a well-known aircraft configuration, supported by para. [0004] of the disclosure. It is believed this will satisfy the Examiner's Drawing Requirement rejection.

The brief description of the drawings has also been amended to introduce the new Fig. 4.

The Examiner has rejected the claims under 35 USC 112, stating "Applicant did not disclose or previously claim a multi-engine aircraft that comprised specifically of two engines that rotate in opposite directions. Applicant also did not disclose the gearing and pump relations for said engines relative to each other....Applicant did state in the background that it may be beneficial to turn two propellers on the same aircraft in opposite directions, but that does not necessarily equate with two engines running in opposite directions, and comprising different gearsets." [Office Action, page 3].

With respect, the 112 rejections lack proper basis for the claims, as amended, and should therefore be withdrawn. The Applicant makes the following observations:

- Claims 15-21, and amended claims 22-27, do not claim "specifically...two" engines, but rather describe two engines of a multi-engine system. The skilled reader will appreciate that a multi-engine system will implicitly include a first and a second engine (and maybe more, but at least that). "[N]ewly added claim limitations must be supported in the specification through express, implicit, or inherent disclosure." **MPEP 2163**. "During patent examination, the pending claims must be given their broadest reasonable interpretation consistent with the specification." **MPEP 2111**. There is nothing in the claims which limit the aircraft to two engines, and thus

broadest reasonable interpretation (in light of para. [0004]) is that the claim is not limited to specifically two engines.

- Claims 15-21, and amended claims 22-27, do not claim "engines that rotate in opposite directions", but rather that pump driving shafts rotate in opposite directions, for which there is ample written description. See Paragraphs [0003]-[0007] and [0017]: "PCU pumps are usually operatively connected to and thus driven by propeller shafts of the aircraft system.... In a multi-propeller aircraft system, it has been considered to be advantageous to the aircraft system performance that the propellers of the aircraft rotate in different directions, namely some propellers rotate in a clockwise direction and the remaining propellers rotate in a counter-clockwise direction... The PCU pump 14 can be driven in rotation only in one predetermined direction, and therefore the apparatus 10 according to the present invention is adapted to ensure that predetermined direction of rotation of the PCU pump 14 regardless of the direction of rotation of the propeller shaft 12."
- The gearing and pump relations for the engines, and requirement for different gearsets is clearly disclosed. See Paragraphs [0003]-[0007] and [0017]: "PCU pumps are usually operatively connected to and thus driven by propeller shafts of the aircraft system.... In a multi-propeller aircraft system, it has been considered to be advantageous to the aircraft system performance that the propellers of the aircraft rotate in different directions, namely some propellers rotate in a clockwise direction and the remaining propellers rotate in a counter-clockwise direction. This can be achieved by providing either a clockwise or counter-clockwise propeller gearbox to couple the particular propeller shaft to each engine which drives that propeller.... The propeller shaft 12, a central axis of which is indicated by numeral 13, extends at one end thereof from a propeller gearbox or so-called reduction gearbox (RGB) 16 and is coupled at the other end thereof with the propeller assembly 18.... The direction of rotation of the propeller assembly 18 and the propeller shaft 12 is determined by use of a clockwise (CW) RGB or a counter-clockwise (CCW) RGB mounted to the same engine 20.... The PCU pump 14 can be driven in rotation only in one predetermined direction, and therefore the apparatus 10 according to the present invention is


adapted to ensure that predetermined direction of rotation of the PCU pump 14 regardless of the direction of rotation of the propeller shaft 12."

- **MPEP 2163** states: "a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention.". The "specification" includes the Background. **MPEP 608.01(a)**.
- The Specification discloses only one context in which engines having respective pump driving shafts which rotate in opposite directions - i.e. multi-engine aircrafts. No other context is disclosed. Therefore, how can one allege that the skilled reader will not be able to reasonably conclude that the discussions of provide PCU pumps which rotate in opposite directions are directed to this context?
- "[T]he examiner has the initial burden of presenting evidence or reasoning to explain why persons skilled in the art would not recognize in the disclosure a description of the invention defined by the claims." **MPEP 2163**. In light of the above comments, to maintain the rejection the Examiner must explain why the specification does not disclose the invention claimed in the claims, as amended.
- "[T]he examiner should review the claims and the entire specification, including the specific embodiments, figures, and sequence listings, to understand how applicant provides support for the various features of the claimed invention". The individual portions of the specification are not read in isolation by the skilled reader, but rather tell a story to the skilled reader. If only one problem involving aircraft with counter-rotating shafts is described, and how this causes design and inventory problems, and then an apparatus which solves this problem is described, the skilled reader will make the reasonable conclusion that the solution described must address the only problem described. No other conclusion is logical.

The Applicant therefore respectfully requests withdrawal of the present rejections, and allowance of the claims.

Reconsideration of this application is respectfully requested.

Respectfully submitted,

By:   
Wayne H. YAN  
Registration No. 44,485  
Agent for Applicant

WHY/sa

Encl. See Appendix with new drawing sheet (Figure 4)

Address: Ogilvy Renault LLP (PWC)  
Suite 1600  
1981 McGill College Avenue  
Montreal, Quebec H3A 2Y3  
Canada

Ph: 613-780-8682  
Fax: 613-230-6706  
email: [wyan@ogilvyrenault.com](mailto:wyan@ogilvyrenault.com)

**AMENDMENTS TO THE DRAWINGS**

The attached sheet of drawings includes NEW FIG. 4.

Attachment: NEW sheet